



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0932; Project Identifier MCAI-2022-01491-E]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd. & Co. KG Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive

(AD) 2021-26-11, which applies to all Rolls-Royce Deutschland Ltd. & Co. KG (RRD)

Model RB211-Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17

engines. AD 2021-26-11 requires replacing the affected fuel pump on at least one

affected engine. Since the FAA issued AD 2021-26-11, the FAA has determined that

replacing all affected fuel pumps on all installed engines is necessary to address the

unsafe condition. This proposed AD would require replacing the affected fuel pump on at

least one engine before further flight and replacing all affected fuel pumps within a

specified compliance time, and would also prohibit installing any affected engine onto

any airplane or any affected fuel pump onto any engine, as specified in a European Union

Aviation Safety Agency (EASA) AD, which is proposed for incorporation by reference

(IBR). The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this NPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0932; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For EASA service information that is proposed for IBR in this NPRM, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: ADs@easa.europa.eu; website: easa.europa.eu. You may find this material on the EASA website at ad.easa.europa.eu. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0932.

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

FOR FURTHER INFORMATION CONTACT: Sungmo Cho, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone:

(781) 238-7241; email: Sungmo.D.Cho@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2023-0932; Project Identifier MCAI-2022-01491-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Sungmo Cho, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA

01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2021-26-11, Amendment 39-21870 (86 FR 71367, December 16, 2021) (AD 2021-26-11), for all RRD Model RB211-Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17 engines. AD 2021-26-11 was prompted by an MCAI originated by EASA, which is the Technical Agent for the Member States of the European Union. EASA issued EASA AD 2021-0245, dated November 10, 2021 (EASA AD 2021-0245), to correct an unsafe condition identified as failure of the variable stator vane system.

AD 2021-26-11 requires replacing the affected fuel pump on at least one engine. The FAA issued AD 2021-26-11 to prevent failure of the variable stator vane system, which could result in loss of engine thrust control, in-flight engine shutdown, and reduced control of the airplane.

Actions Since AD 2021-26-11 was Issued

Since the FAA issued AD 2021-26-11, EASA superseded EASA AD 2021-0245 and issued EASA AD 2022-0225, dated November 21, 2022 (EASA AD 2022-0225) (referred to after this as the MCAI). The MCAI states that reports of single engine events caused by water contamination resulted in loss of engine thrust. An investigation determined that certain engines were exposed to unacceptable levels of water contamination, which caused corrosion on the fuel pump's internal components. This corrosion led to debris release and filter blockages in variable stator vane actuator control units, which resulted in the variable stator vane system failing in the closed position.

The FAA has since determined that in addition to replacing the affected fuel pump on at least one engine before further flight, replacing all affected fuel pumps installed on all engines within a specified compliance time and prohibiting installation of

any affected engine onto any airplane or any affected fuel pump onto any engine is necessary to address the unsafe condition. Subsequently, the manufacturer published service information, which describes procedures for replacing the fuel pump.

Additionally, the FAA has determined that the estimated labor cost in AD 2021-26-11 requires revision as it indicates 4.5 work-hours are required to replace the affected fuel pump. The correct estimated labor cost for replacement of the affected fuel pump is estimated to be 9 work-hours. The FAA has updated the cost estimate in this proposed AD to reflect the correct number of work-hours.

The FAA is proposing this AD to prevent failure of the variable stator vane system. This condition, if not addressed, could result in dual-engine loss of thrust control or in-flight engine shutdown, and reduced control of the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0932.

Related Service Information under 1 CFR Part 51

The FAA reviewed EASA AD 2022-0225, which specifies procedures for replacing the affected fuel pump. EASA AD 2022-0225 also specifies not to install an affected engine onto any airplane or an affected part onto any engine. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

FAA's Determination

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI described above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would retain none of the requirements of AD 2021-26-11. This proposed AD would require accomplishing the actions specified in the MCAI described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD and except as discussed under “Differences Between this Proposed AD and the MCAI.” This proposed AD would also prohibit installation of any affected engine onto any airplane or any affected fuel pump onto any engine.

Explanation of Required Compliance Information

In the FAA’s ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has since coordinated with other manufacturers and CAAs to use this process. As a result, the FAA proposes to incorporate by reference EASA AD 2022-0225 in the FAA final rule. This proposed AD would, therefore, require compliance with EASA AD 2022-0225 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Using common terms that are the same as the heading of a particular section in the EASA AD does not mean that operators need comply only with that section. For example, where the AD requirement refers to “all required actions and compliance times,” compliance with this AD requirement is not limited to the section titled “Required Action(s) and Compliance Time(s)” in EASA AD 2022-0225. Service information required by the EASA AD for compliance will be available at [regulations.gov](https://www.regulations.gov) by searching for and locating Docket No. FAA-2023-0932 after the FAA final rule is published.

Differences Between this Proposed AD and the MCAI

Where paragraph (1) of EASA AD 2022-0225 requires replacing the affected part within 30 days after November 17, 2021 (the effective date of EASA AD 2021-0245),

this AD requires replacing an affected fuel pump on at least one engine before further flight after the effective date of this AD.

Where paragraphs (3) and (4) of EASA AD 2022-0225 refer to November 17, 2021 (the effective date of EASA AD 2021-0245), this AD requires using the effective date of this AD.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 2 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replace fuel pump	9 work-hours x \$85 per hour = \$765	\$138,456	\$139,221	\$278,442

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive 2021-26-11, Amendment 39-21870

(86 FR 71367, December 16, 2021); and

- b. Adding the following new airworthiness directive:

Rolls-Royce Deutschland Ltd. & Co. KG: Docket No. FAA-2023-0932; Project Identifier MCAI-2022-01491-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2021-26-11, Amendment 39-21870 (86 FR 71367, December 16, 2021).

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd. & Co. KG Model RB211-Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17 engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7314, Engine Fuel Pump.

(e) Unsafe Condition

This AD was prompted by reports of single engine events caused by water contamination, which led to corrosion on the fuel pump that resulted in loss of engine thrust. The FAA is issuing this AD to prevent failure of the variable stator vane system. The unsafe condition, if not addressed, could result in dual-engine loss of thrust control or in-flight engine shutdown, and reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified in paragraphs (h) and (i) of this AD: Perform all required actions within the compliance times specified in, and in accordance with, European Union Aviation Safety Agency (EASA) AD 2022-0225, dated November 21, 2022 (EASA AD 2022-0225).

(h) Exceptions to EASA AD 2022-0225

(1) Where paragraph (1) of EASA AD 2022-0225 specifies to replace the affected part with a fuel pump that is not an affected part, on at least one of the affected engines within 30 days after 17 November 2021 [the effective date of EASA AD 2021-0245], this AD requires replacing an affected fuel pump on at least one engine before further flight after the effective date of this AD.

(2) Where paragraph (2) of EASA AD 2022-0225 refers to its effective date, this AD requires using the effective date of this AD.

(3) Where paragraphs (3) and (4) of EASA AD 2022-0225 refer to November 17, 2021 (the effective date of EASA AD 2021-0245), this AD requires using the effective date of this AD.

(4) This AD does not adopt the Remarks paragraph of EASA AD 2022-0225.

(5) Where the service information referenced in EASA AD 2022-0225 specifies to scrap fuel pumps, this AD requires removing those fuel pumps from service.

(6) Where the service information referenced in EASA AD 2022-0225 specifies to return fuel pumps, this AD requires removing those fuel pumps from service.

(i) No Reporting Requirement

Although the service information referenced in EASA AD 2022-0225 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the

certification office, send it to the attention of the person identified in paragraph (k) of this AD and email to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Additional Information

For more information about this AD, contact Sungmo Cho, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7241; email: Sungmo.D.Cho@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) European Union Aviation Safety Agency AD 2022-0225, dated November 21, 2022.

(ii) [Reserved]

(3) For EASA AD 2022-0225, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone: +49 221 8999 000; email: ADs@easa.europa.eu; website: easa.europa.eu. You may find this EASA AD on the EASA website at ad.easa.europa.eu.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the

availability of this material at NARA, email: fr.inspection@nara.gov, or go to:

www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on April 11, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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